

REMARKS

Favorable reconsideration of this application is respectfully requested in view of the following remarks.

At the outset, the undersigned expresses appreciation to Examiner Foreman for his time and attention during the interview that was conducted at the U.S. Patent and Trademark Office on July 26, 2006. The remarks below discuss the substance of the interview.

The subject matter of this application pertains to a guide wire. According to one aspect of the invention, the guide wire comprises first and second wires that are joined to each other by welding at a welded portion, wherein the welded portion forms a projection that projects in the outer peripheral direction. As discussed in the present application, for example at paragraph [0079], one advantage associated with the projection formed at the welded portion is that the projection can be relatively easily viewed under fluoroscopy, thus making it possible to view the advancing state of the guide wire during use.

One of the references relied upon in the rejection of independent Claims 1 and 8 is U.S. Patent No. 6,001,068 to *Uchino et al.* *Uchino et al.* discloses a guide wire that includes two wires A, B joined to one another as illustrated in Fig. 3(2) by a butt welding machine. As described in lines 9-11 of column 8 of *Uchino et al.*, after the first and second wires A, B are joined together, the resulting projection that is formed at the abutting ends of the two wires is scraped off to produce the guide wire shown in Fig. 3(3) which possesses an outer surface of constant diameter to allow the connector 12 to be slid over the joint.

As explained during the interview, the guide wire at issue here differs from the guide wire disclosed in *Uchino et al.* in that the guide wire at issue here is configured so that the projection at the welded portion is present on the guide wire during use. That is, the projection is present on the guide wire in its final state. In contrast, the projection in *Uchino et al.*'s guide wire is only present in an intermediate stage of manufacture of the guide wire -- not in its final state ready for use. Examiner Foreman commented during the interview that while this distinction is true, Claims 1 and 8 define the structure of the guide wire rather than the method of using the guide wire. Thus, while Fig. 3(2) of *Uchino et al.* illustrates the guide wire in an intermediate stage of manufacture, the rejection is appropriate because the guide wire nevertheless possesses structure corresponding to that recited in Claims 1 and 8.

In light of this interpretation, independent Claims 1 and 8 have been amended to recite that a cover layer is disposed over the projection. Quite clearly, in *Uchino et al.*, there is no disclosure of both a projection and a cover layer disposed over such projection. To the extent one would apply a cover layer to the guide wire disclosed in *Uchino et al.*, such cover layer would be applied to the finished version of the guide wire illustrated in Fig. 3(3) where there exists no projection.

It is thus respectfully submitted that the guide wire recited in independent Claims 1 and 8 is patentably distinguishable over the disclosure in *Uchino et al.*

The Official Action also rejects independent Claims 1 and 8 based on the disclosure in U.S. Patent No. 5,957,865 to *Backman et al.* As explained during the interview, this document discloses a guide wire that includes a core wire 12 and a coil spring 52 whose proximal end 60 is attached to the core wire 12 by a solder or

weld joint 54. The rejection set forth in the Official Action is based on the observation that the solder or weld joint 54 corresponds to the claimed projection. During the interview, the undersigned proposed amending independent Claims 1 and 8 to distinguish over the interpretation that the solder or weld joint 54 corresponds to the claimed welded portion forming a projection. In particular, the undersigned proposed amending the claims to recite that material forming at least one of the proximal end of the first wire and the distal end of the second wire constitutes at least a part of the projection (i.e., the projection is formed at least in part by material forming at least one of the first wire and the second wire). In the case of the guide wire disclosed in *Backman et al.*, the solder or weld joint 54 is not formed by material constituting at least a part of the wire 12 or the coil spring 52. Examiner Foreman pointed out during the interview that the patent states that the coil spring 52 is attached to the core wire 12 by a solder or weld joint 54 which the Examiner interpreted to mean that the coil spring 52 could be welded directly to the core wire 12 so that at least a part of the coil spring 52 would form a part of the weld.

As explained during the interview, it is apparent that what *Backman et al.* envisions is a weld or solder joint 54 formed of a material different from the coil spring 52 and the core wire 12. Nevertheless, to advance prosecution of this application, independent Claims 1 and 8 have been amended to set forth, in addition to the language reciting that material forming at least one of the proximal end of the first wire and the distal end of the second wire constitutes at least a part of the projection, that the first wire and the second wire are not helical coils. With this interpretation, the claimed guide wires recited in independent Claims 1 and 8 are patentably distinguishable over the disclosure in *Backman et al.*

Another rejection of independent Claims 1 and 8 set forth in the Official Action is based on the disclosure in U.S. Application Publication No. 2003/0100847 to *D'Aquanni et al.* In the guide wire disclosed in this reference, material forming at least one of the wires 17, 18 does not constitute at least a part of the projection formed by the solder or weld 19. Further, in light of the aforementioned language incorporated into independent Claims 1 and 8 defining that the first and second wires are not helical coils, the coils 15, 23 disclosed in *D'Aquanni et al.* cannot be interpreted as corresponding to the claimed first and/or second wires. It is thus respectfully submitted that the claimed guide wire recited in independent Claims 1 and 8 is also patentably distinguishable over the disclosure in *D'Aquanni et al.*

The Official Action sets forth two different rejections of independent Claim 15, one based on the disclosure in U.S. Patent No. 5,465,733 to *Hinohara et al.* and the other based on the disclosure in U.S. Application Publication No. 2003/0069521 to *Reynolds et al.* To better distinguish over the disclosures in these two references, independent Claim 15 is amended to recite that the welded portion forms a projection that projects in an outer peripheral direction, to recite that a cover layer is disposed over the projection, and to recite that material forming at least one of the proximal end of the first wire and the distal end of the second wire constitute at least a part of the projection. Thus, Claim 15 now recites features similar to features recited in independent Claims 1 and 8, except that instead of reciting that the first and second wires are not a helical coil, Claim 15 includes the additional recitation that the guide wire includes a spiral coil covering at least the distal end portion of the first wire. The present application discloses, for example in Fig. 1, that a spiral coil 4 covers at least the distal end portion of the wire. This language is added to Claim 15

to avoid the possibility that one of the prior art references disclosing a coil welded to a wire would be interpreted as corresponding to the claimed guide wire. That is, Claim 15 recites that the guide wire includes first and second wires that are joined to each other by welding at a welded portion to form a projection, and also recites the spiral coil covering at least the distal end portion of the first wire.

It is respectfully submitted that none of the prior art references applied in the Official Action discloses a guide wire having the claimed combination of features set forth in independent Claim 15 and so such claim is also allowable.

Finally, with respect to the two provisional obviousness-type double patenting rejections set forth on page two of the Official Action, the amendments to independent Claim 1 reciting that a cover layer is disposed over the projection, that the first and second wires are not helical coils, and that the material forming at least one of the proximal end of the first wire and the distal end of the second wire constitutes at least a part of the projection formed by the welded portion, it is respectfully submitted that the provisional obviousness-type double patenting rejections are no longer appropriate. That is, the noted claims of the copending applications do not disclose a guide wire comprising the subject matter now recited in independent Claim 1 of the present application. Accordingly, withdrawal of the provisional obviousness-type double patenting rejections is respectfully requested.

Also presented by way of this Amendment are several new independent claims. New independent Claim 18, which was discussed during the interview, defines a method of operating a guide wire and recites that the method comprises inserting into the lumen of a body a guide wire comprising a first wire and a second wire disposed on the proximal side from the first wire, with the first and second wires

being joined to each other by welding at a welded portion forming a projection that projects outwardly in the outer peripheral direction. The method also involves moving the guide wire along the lumen of the body and visualizing the position of the projection of the guide wire in the lumen of the body under fluoroscopy. As discussed during the interview, none of the references relied upon in the Official Action disclose visualizing under fluoroscopy the position of a projection on a guide wire that is formed by the welded portion between first and second wires. It is thus respectfully submitted that independent Claim 18 is allowable.

New independent claim 19 defines a guide wire according to another aspect of the disclosure such as the guide wire illustrated by way of example in Fig. 14 of the present application. As claimed, the guide wire includes first and second wires that are not helical coils, and that are joined to each other by welding at a welded portion, with the welded portion forming a projection on the guide wire that projects in the outer peripheral direction. In addition, Claim 19 recites that the first wire comprises a reduced outer dimension portion possessing an outer dimension smaller than the outer dimension of the projection and smaller than the outer dimension of a distally located portion of the first wire, with the reduced outer dimension portion of the first wire being positioned between the projection and the distally located portion of the first wire. The claim also recites that the second wire comprises a reduced outer dimension portion possessing an outer dimension smaller than the outer dimension of the projection and smaller than the outer dimension of a proximally located portion of the second wire, with the reduced outer dimension portion of the second wire being positioned between the projection and the proximally located portion of the second wire. Further, Claim 19 recites that the material forming at

least one of the proximal end of the first wire and the distal end of the second wire constitute at least a part of the projection. A guide wire having this claimed combination of features is not disclosed in any of the documents relied upon in the Official Action.

Another new independent claim presented here, Claim 21, is directed to a method of making a guide wire. This claim was briefly discussed during the interview and Examiner Foreman indicated that this claim would be subject to a restriction requirement. Nevertheless, such claim is presented here so that the restriction requirement can be made of record in the application.

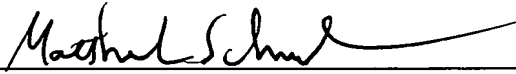
For at least the reasons set forth above, it is respectfully submitted that this application is in condition for allowance and such action is earnestly solicited.

Should the Examiner have any questions concerning this application or believe that a telephone conference with the undersigned would be helpful in resolving any remaining issues pertaining to this application, the undersigned respectfully requests that he be contacted at the number indicated below.

Respectfully submitted,

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